

METROPOLITAN
TRANSPORTATION
COMMISSION

Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, CA 94607-4700
TEL 510.817.5700
TTY/TDD 510.817.5769
FAX 510.817.5848
E-MAIL info@mtc.ca.gov
WEB www.mtc.ca.gov

Adrienne J. Tissier, Chair

Amy Rein Worth, Vice Chair

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U.S. Department of Housing
and Urban Development

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Deputy Executive Director, Operations

March 1, 2011

CALL FOR PROJECTS

Program for Arterial System Synchronization (PASS)

Cities and Counties San Francisco Bay Area

The Metropolitan Transportation Commission (MTC) invites your agency to submit applications for the 2011/12 cycle of the Program for Arterial System Synchronization (PASS). Technical assistance will be provided to Bay Area jurisdictions with retiming traffic signal systems that include signals from multiple jurisdictions, interact with freeways and state highways, operate on corridors with established regional significance, provide transit priority, or have been developed in conjunction with other regional programs. Successful applicants will receive technical assistance from MTC's consultants for development and implementation of new traffic signal coordination plans. The budget for the 2011/12 Cycle is \$1.25 million in federal funds, with the local matching funds provided by MTC.

Application Due Date

Interested agencies must submit an original, five (5) hard copies and a scanned PDF copy (in a CD Rom or email) of their application (<u>Appendix C</u>) by **5:00 p.m.**, **Tuesday, April 12, 2011. Applications received after that date and time will not be considered and will be returned to the sender.** Faxed or Emailed applications will not be accepted or considered. The electronic version of the project application is available for download from the MTC website at: http://www.mtc.ca.gov/funding/ or applicants may contact the MTC Project Manager directly.

MTC Contact

Completed applications and all inquiries related to this Call for Projects should be submitted to the Project Manager at the address shown below. For inquiries, you may also call 510.817.5936 or e-mail vtabjulu@mtc.ca.gov.

Vamsi Tabjulu, Project Manager Metropolitan Transportation Commission Joseph P. Bort MetroCenter 101 Eighth Street Oakland CA 94607-4700

1 Introduction

The purpose of the Program for Arterial System Synchronization (PASS) is to provide technical and financial assistance to Bay Area agencies to help improve the safe and efficient operation of certain traffic signal systems and corridors. The Transportation 2035 Plan provides approximately \$1.25 million per year in CMAQ funds for traffic signal coordination under PASS. MTC will administer and manage this program, but the primary responsibility for the operation and retiming of traffic signals resides with the agency that owns them. Projects are defined by local agencies, evaluated by MTC staff, and assigned to consultants retained by MTC.

Under this regional program, technical assistance and financial support will be focused on traffic signal system projects that:

- 1. Interact with freeways and state highways;
- 2. Involve traffic signals from multiple jurisdictions;
- 3. Operate on corridors with established regional significance:
- 4. Provide priority for transit vehicles; and
- 5. Have been developed in conjunction with other regional programs.

1.1 Goals and Objectives

The goals and objectives of the PASS are as follows:

- 1. Establish and maintain communications between systems owned by Caltrans and local agencies. This could entail provision of GPS units, signal interconnect cable, or other technology to enable two-way communication and coordination, as well as retiming the signals once the new communications system is activated.
- 2. Coordinate local and state-owned signal systems, and retime signal systems in response to changes to the state-owned system. This would include changes resulting from freeway widening, reconfiguration of interchanges or intersections, implementation of ramp metering, or altering the lane configuration on state highways.
- 3. Retime traffic signal systems to support priority for transit vehicles. This would include active priority through signal preemption systems and passive priority through signal timing plans, and could include providing transit vehicles with rapid access/egress from major transit hubs.
- 4. Retime traffic signal systems in conjunction with other established regional programs, such as Safe Routes to Schools, Safe Routes to Transit, Complete Streets, SMART corridors, and Incident Management.

Typical tasks performed under the PASS to meet the above goals and objectives include, but are not limited to, the following:

- 1. Improve reliability and predictability of travel along arterial roads.
 - Develop and implement signal coordination plans (a.m., p.m., and/or midday) that reduce travel time and delay on corridors that contain state and local signals.

- Collect peak period turning movement counts at all study intersections, including pedestrian and bicycle counts, and seven-day 24-hour machine counts at strategic locations to determine periods of coordination.
- Develop and implement signal coordination plans based on the throughput of people rather than vehicles.
- Develop and implement flush plans for arterials that are used as diversion routes in the event of freeway incidents, in conjunction with other incident management actions.
- Develop and implement optimized actuated settings for fully actuated signals to minimize queuing during non-peak periods.
- 2. Improve air quality through decreased motor vehicle emissions and fuel consumption.
 - Develop and implement signal coordination plans that reduce starts and stops and promote uniform travel speeds.
 - Develop and implement transit signal priority plans to make transit a more attractive travel option.
- 3. Improve the safety of motorists, pedestrians, and bicyclists.
 - Collect pedestrian and bicyclist volume data at the same time as vehicle count data at intersections to be coordinated.
 - Develop and implement signal coordination plans that promote uniform travel speeds, thereby reducing rear-end collisions.
 - Review existing pedestrian crossing times and bicycle detection at intersections to be coordinated, and recommend adjustments as necessary.
 - Review collision history for patterns that are susceptible to correction through signal timing and recommend adjustments as necessary.
- 4. Provide streamlined program administration and project management.
 - Provide high-quality technical assistance in a cost-effective manner.
 - Require local agency review and approval of timing plans prior to implementation.
 - Provide a peer review option to small agencies that do not have in-house traffic engineering staff.
 - Use data on the quality of the deliverables and the number of projects completed within schedule and budget to guide assignment of projects to consultants in subsequent cycles.
 - Facilitate interagency communication and coordination.

2 Eligibility

The applicant for PASS funds must be a Bay Area public agency, and must either be an owner of the traffic signal system addressed in the application, or authorized to act on behalf of multiple agencies (e.g., a smart corridor) that own the traffic signal system(s) addressed in the application. For an applicant to apply on behalf of other agencies, the applicant must have the other agencies sign the application or submit letters of support for the proposed project that authorize the applicant to apply on their behalf. It is the responsibility of each applicant to ensure all local funding and approval requirements are met.

Applicants for projects that involve Caltrans traffic signals do not need to submit letters of support or signatures from Caltrans since these applications will be reviewed by MTC and Caltrans after submission. Project sponsors are required, however, to notify the appropriate Caltrans traffic operations staff about their PASS application if it includes Caltrans signals. If

any additional information is needed from Caltrans to complete the application, the project sponsor must coordinate with Caltrans at least two weeks in advance of the application submittal deadline

All agencies that are involved in a project must also satisfy the following requirements:

- 1. Indemnify MTC by signing an indemnification agreement **before** any work on the project begins;
- 2. Provide staff time to review and approve project deliverables as per the schedule;
- 3. Work with MTC and Caltrans to identify a plan for the GPS clocks installation if required for the project;
- 4. Provide staff time to assist consultants with implementing timing plans; and
- 5. Commit to completing the project within one year of the award date.

2.1 Eligible Projects

To be eligible for PASS funds, a project must entail retiming traffic signal systems, consistent with the purposes set forth in Section 1.1. As part of the application, the project sponsor must demonstrate how the proposed project meets the goals and objectives described in Section 1.1. There is no maximum funding for a project. While there is no maximum number of projects that may be submitted for consideration, it is unlikely that more than two projects will be awarded to the same project sponsor in a year.

In addition to the basic signal coordination, the scope of the PASS program includes providing additional services like incident management flush plans, transit signal priority plans, traffic responsive timing plans, weekend timing plans, additional timing plans, technical studies, feasibility studies, evaluation of transit benefits, etc. These services should be requested by the project sponsor in the application and will be included in the Workscope, Schedule and Budget (WSB), contingent on approval by MTC. Consultant may also be requested to perform these additional services for any projects retimed in the last two years under the Regional Signal Timing Program (RSTP) 2009 or the PASS 2010/11 Cycles. Such services may increase the scope of the work to include additional meetings, additional data collection, field visits, technical analyses, studies, fine-tuning, conditional diagrams, updating Visio coversheets, etc.

Traffic signal retiming projects must involve a minimum of eight signalized intersections with interconnection or reliable time sources, and are currently capable of coordinated operation, unless the project application requests funding for establishing communication. Improvements to communication systems are eligible, but limited to a maximum of \$10,000 per project. Capital improvements funded with PASS federal funds will be limited to communication systems, and will be capped at \$10,000 per project. MTC, at its sole discretion, may approve more funds for this task for the successful completion of any particular project.

MTC will procure all of the GPS clocks required for the project. The local agencies will be required to install these clocks at their project signals. The local agencies may be asked to provide staff support to install the clocks at Caltrans signals after securing a Caltrans permit. Other options will be identified for local agencies that cannot provide staff support for installing these clocks at Caltrans signals. MTC will be actively involved to coordinate this task with all stakeholders. The clocks will be owned and maintained by the agency that owns the traffic

signal. MTC will also provide spare GPS clocks to Caltrans that can be used to replace any malfunctioning clocks so as to keep the corridor in coordination.

As mentioned in Section 1, high priority will be given to those projects that interact with freeways and state highways and involve traffic signals from multiple jurisdictions. Projects that involve traffic signals owned by one local agency are considered to have low priority for PASS funding, unless they are part of a regional program, such as Safe Routes to Schools, Safe Routes to Transit, Complete Streets, SMART corridors, and Incident Management. Projects that satisfy the requirements in Section 1, but request only weekend timing plans, have low priority for PASS funding, unless the traffic volumes are equal to or above the weekday peak period volumes. The project sponsor must provide adequate documentation in the application to establish the need for weekend coordination in these corridors.

2.2 Ineligible Projects

Projects that involve traffic signals that have been coordinated within the past three years are ineligible, unless a change has occurred to the state-owned portion of the system.

Projects that involve development of traffic signal coordination plans for future traffic volumes are also ineligible.

3 Selection Process

3.1 Application

The PASS 2011/12 Application is attached in Appendix C. Applications from prior or for future cycles will not be reviewed or approved. All applications for eligible projects received by the deadline shown on page 1 will be reviewed by MTC and Caltrans staff. Applications received after the deadline will not be considered and will be returned unopened to the project sponsor without exceptions.

Complete applications that clearly demonstrate how the proposed project meets the goals and objectives described in Section 1.1 will be given high priority for PASS funding. Projects that do not receive funding immediately will be placed on eligibility list, in case one or more approved projects can not be pursued. Unsuccessful project sponsors are encouraged to re-apply in subsequent cycles of the program to receive funding.

3.2 Waiver of Claims and Indemnification

Receipt of a PASS grant is contingent on the local agency's willingness to enter into an agreement with MTC to: (1) waive any and all claims against MTC for any loss liability or damages resulting from this program (directly or indirectly); and (2) indemnify, hold harmless, and defend MTC against any and all third party claims that may result from the agency's participation in the program. This agreement has to be executed by the person authorized to enter into agreements with MTC. An agency that requires peer review assistance will also be required to sign such an agreement in favor of the peer reviewer. This agreement is attached in Appendix-B and an electronic version is available for download along with the project application from the MTC website at: http://www.mtc.ca.gov/funding/ or applicants may contact the MTC Project Manager directly.

It is strongly recommended, but not required, that the indemnification agreements be submitted to MTC along with the application. All agencies (sponsor and participants) are encouraged to review this agreement with their attorneys to obtain approval before submitting an application. It is strongly recommended that the local agency start the indemnification agreement approval process as soon the application is filed in the spring, thus providing themselves with sufficient time to submit a signed agreement by the project commencement in the summer. The waiver and indemnification agreement must be on file with the MTC project manager within thirty (30) days of notification that the agency has been selected for participation in the program. Please note that the MTC Project Manager is required to have this completed form on file **before** any work on the project can begin. If this agreement is not submitted, MTC, at it sole discretion, reserves the right to allocate these funds to other projects from the eligibility list.

<u>Please note:</u> The term of this Agreement shall continue indefinitely, applying to multiple Consultant contracts, unless terminated by written notice of either party or superseded by another Indemnification Agreement. If your agency has executed an agreement for the PASS 2010/11 Cycle, you are not required to submit this form. If you have any questions regarding the existence or validity of your agency's agreement, please contact the MTC Project Manager directly. All participating agencies, including the primary sponsor, are required to sign this agreement with MTC.

3.3 Grant Award Notification

The applications are evaluated by MTC and Caltrans staff, to determine projects with high-priority for funding. Successful project applicants will be notified after the approval by the MTC Operations Committee in June 2011. Grants are awarded in the form of Consultant assistance, and MTC directly pays the Consultant at the successful completion of each project deliverable. To maximize the use of available funds for signal coordination, local agency staff costs are not typically reimbursed in part or full under PASS. However, MTC understands some projects with a large number of signals require a significant amount of local agency staff time, and thus the funding of this task is solely at the discretion of MTC.

3.4 Consultant Assignment

Project sponsors will be given an opportunity to indicate their consultant preferences in the application. Efforts will be made to assign consultants based on project sponsor preferences, but it is possible that the assigned consultant may not be the sponsor's first preference. MTC will assign project consultants based on the consultants' performance during the prior year, services requested in the application, project sponsor preferences, and equity. MTC will work closely with all of the consultants and stakeholders to ensure the project is successfully completed as per the Scope of Work, Schedule and Budget attached in Appendix A. MTC will seek feedback from all participating agencies and consultants to make changes/enhancements to the program at the end of the project.

MTC reserves the right to withdraw a project grant if the project sponsor is unwilling to work with the consultant assigned for the project.

4 Project Delivery

The assigned consultant contacts the project sponsor, other stakeholders, and MTC to schedule the kick-off meeting for the project. The kick-off meeting provides an opportunity to establish communication channels and protocols; discuss the scope of work, schedule, and budget; gather available information; and discuss the sponsor's goals and signal timing practices with the consultant.

All necessary technical correspondence occurs between the project sponsor, other stakeholders, and the consultant. MTC is copied on all technical correspondence. The role of MTC is to ensure that high quality, timely, and within-budget technical assistance is provided for the agreed upon scope of work. Any changes to the scope of work agreed upon at the kick-off meeting are subject to MTC approval and require a revised Workscope, Schedule and Budget.

All agencies that own or operate traffic signals within the project limits, as well as MTC, are required to review consultant deliverables in a timely fashion. MTC's review of deliverables focuses on adherence to the approved scope of work. Consultants are paid for each deliverable by MTC after both the project sponsor and MTC have approved the deliverable and all comments have been addressed. The consultant will directly invoice MTC for all the deliverables completed in the calendar month.

The consultant has to allocate sufficient time for all the agencies involved to review and comment on the deliverable. Deliverable review time is set during the kick-off meeting. At the completion of each deliverable the consultant has to submit a 'Comment Response Sheet' incorporating the comments received from all agencies and the actions taken to address the comments. Any changes to the agreed upon schedule are subject to MTC approval.

4.1 Timeline for 2011/12 Cycle

	<u>Task</u>	Timeline for 2011/12 Cycle
0.	Call for Projects	March/April 2011
	Project Approval/Notification	June 2011
	Project Start-Up	
1.	Kick-Off Meetings	July 2011
	Workscope, Schedule, and Budget	August 2011
	Analysis of Existing Conditions	
2.	Data Collection	September 2011
	Analysis	October 2011
3.	Recommendations	January 2012
1	Implementation and Evaluation	Implementation by March 2012;
4.	Implementation and Evaluation	Final Project Report by May 2012

Please find attached the Appendix A: Scope of Work, Schedule and Budget; Appendix B: Indemnification Agreement; and Appendix C: Application. We appreciate your interest in this Call for Projects and look forward to receiving your completed application.

Sincerely,

Andrew Fremier

Deputy Executive Director, Operations

AF: VT

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Appendix - A

Scope of Work, Schedule and Budget

I. Scope of Work:

The services to be performed by Consultant will consist of services requested by the MTC Project Manager or a designated representative including, but not limited to, the following:

0. Program Kick-Off

At the beginning of each annual cycle, Consultant will meet with the MTC Project Manager and other PASS consultants to discuss Program guidelines and standardization of services, deliverable formats, and project administration. Electronic files shall be named in accordance with a naming convention specified by the MTC Project Manager. The project administration guidelines will be discussed and reviewed at this meeting.

1. Project Start-Up

- 1.1 <u>Project Kick-Off Meeting</u> Consultant will schedule a meeting with the project sponsor, other involved agencies, and the MTC Project Manager or designated representative to kick-off the project; establish communication channels and protocols; discuss the scope of work, schedule, and budget; gather available information; and obtain a thorough understanding of the goals of the project. Specific topics to discuss include the turning movement data collection and times to collect travel time data.
- 1.2 Consultant may be asked to assist the local agencies in completing the Caltrans permit application for installation of GPS clocks. Consultant will also make any edits to the application upon feedback from Caltrans permit staff. This task will be considered an additional service and the approx. level of effort shall be included in the WSB.
- 1.3 Consultant may be asked to subcontract an electrical contractor or other firms or agencies with required licenses and expertise to install GPS clocks or other communications equipment at Caltrans signals for certain projects. The subcontractor has to be approved by Caltrans and MTC, and will be required to secure a Caltrans permit. This task will be considered an additional service and the Consultant will be reimbursed for actual costs billed by the subcontractor.
- 1.4 Preparation of a Workscope, Schedule, and Budget Consultant will prepare a detailed Workscope, Schedule, and Budget (WSB) for review and approval by the project sponsor, other involved agencies, and the MTC Project Manager. Consultant will finalize the WSB based on comments received from the project sponsor, other involved agencies, and the MTC Project Manager. This deliverable is invoiced after the approval of the Final WSB.

Deliverable 1A: Draft Workscope, Schedule, and Budget Peliverable 1B: Final Workscope, Schedule, and Budget Final Workscope, and Budget Final Workscop

2. Analysis of Existing Conditions

Consultant will collect and analyze all information necessary to thoroughly understand existing traffic conditions in the study area and be able to develop optimal time-of-day traffic signal coordination plans and transit signal priority plans, if applicable.

- 2.1 <u>Data Collection</u> Consultant will collect existing conditions data including, but not limited to, the following:
- 2.1.1. From the project sponsor and other involved agencies, Consultant will collect existing timing sheets, existing coordination plans, traffic signal as-built drawings, aerial photos, maps, and collision diagrams for the study intersections, if available.
- 2.1.2. From the project sponsor and other involved agencies, including transit properties, if any, Consultant will collect signal timing and signal priority preferences, including, but not limited to, those related to pedestrian and bicycle timing, leading and lagging left-turn phasing, and conditional service, as well as the timing optimization software preference.
- 2.1.3. Consultant will conduct peak period turning movement counts at all study intersections, including pedestrian and bicycle counts, and seven-day 24-hour machine counts at strategic locations to determine periods of coordination. All counts shall be taken during times and days that are representative of the times and days for which coordination plans will be developed. It is preferred that all counts be summarized in MS Excel format or in the format of the project sponsor's preference. It is preferred that Video Data Collection be used for this task as it helps with the validation of the data. Other data collection methods shall be considered based on the preference of the project sponsor or if video data collection is not feasible.
- 2.1.4. Consultant will conduct a field review of all study intersections and street segments to verify lane geometry, speed limits, storage lengths, signal phasing, distances between intersections, and crosswalk lengths, unless the information is available through other sources such as aerial photos and speed surveys. Consultant will conduct a field review at key intersections to measure queue lengths and saturation flows for heavy movements.
- 2.1.5. Consultant will conduct a field review to observe typical traffic patterns during the peak periods for which coordination plans will be developed. Consultant will note factors that are expected to affect signal progression including, but not limited to: intersections with high pedestrian or bicyclist volumes; over-saturated intersections; uneven lane distribution; high volumes of trucks and buses; high-volume unsignalized intersections, including interchanges; parking maneuvers; and presence and location of bus stops.
- 2.1.6. Consultant will verify signal coordination and transit priority capabilities of existing equipment and communications infrastructure. Consultant will take digital photos of the controller cabinet and the contents of the controller cabinet, unless waived by the system

- owner. The digital photos may be taken during timing plan implementation, at the discretion of the Consultant.
- 2.1.7. Consultant will conduct travel time and delay studies, including number of stops, during times and days that are representative of the times and days for which coordination plans will be developed. A minimum of four runs shall be conducted for each direction for each peak period. Travel time and delay studies shall be conducted using the floating car method. The time of performance of the travel time and delay studies will be defined at the kick-off meeting.
- 2.2 <u>Analysis of Existing Conditions</u> Consultant will analyze the data obtained from Task 2.1 as follows:
- 2.2.1 As permitted by the project stakeholders, Consultant will review initial and actuated settings for each study intersection to identify opportunities to minimize delay during non-coordination periods and enhance pedestrian and bicyclist safety. The analysis shall include, but not be limited to, review of minimum and maximum green settings; yellow and red times; pedestrian timing; and gap, extension, and reduction settings.
- 2.2.2 Consultant will review collision diagrams for the study intersections, if available, to identify patterns that are susceptible to correction through signal timing.
- 2.2.3 Using software specified by the project sponsor, Consultant will develop a model of the study area and calibrate the model based on field observations of existing conditions. Signal coordination optimization software may include, but not be limited to, Synchro, TRANSYT 7-F, or PASSER. Transit signal priority modeling software may include, but not be limited to, VISSIM or Paramics. Consultant will calibrate the model based on travel time and delay studies and field observations of queue lengths and saturation flows for heavy movements at key intersections.
- 2.2.4 Consultant will summarize the results of the existing conditions analyses in an Existing Conditions Report. At a minimum, the Memo will include: description of the roadway network and surrounding land uses, including a map showing the study intersections; description of traffic volumes, including day-to-day variability and directionality; description of traffic signal controllers and communication capabilities; identification of factors that are expected to affect progression; results of analysis of initial and actuated settings; description of collision patterns that may be susceptible to correction through signal timing; measures of effectiveness, including delay, number of stops, and travel time from the travel time and delay studies, and fuel consumption and emissions using a methodology specified by MTC; and model calibration results, including a summary of changes to the optimization software's default values. Consultant may be required to meet with the project sponsor and other involved agencies to present and discuss the results of the Memo. Consultant will finalize the Memo based on comments received from the project sponsor, other involved agencies, and the MTC Project Manager.

Deliverable 2A: Draft Existing Conditions Report, including computer model with existing

timings

Deliverable 2B: Final Existing Conditions Report, including computer model with existing

timings

3. Development of Recommendations

Consultant will develop recommendations of optimal initial and actuated settings; time-of-day coordination plans and hours of coordinated operation; and transit signal priority plans and hours of operation, if applicable. Development of optimal time-of-day coordination plans shall include analyses of signal grouping; phasing and phase sequence, including conditional service; cycle lengths, splits, and offsets. Consultant will summarize recommendations in a Recommendations Report. The report shall also include a comparison of existing and proposed timings and a description of expected improvements. Consultant will finalize the Memo based on comments received from the project sponsor, other involved agencies, and the MTC Project Manager.

Deliverable 3A: Draft Recommendations Report, including computer model with

recommended timings

Deliverable 3B: Final Recommendations Report, including computer model with

recommended timings

4. Implementation and Evaluation

Consultant will implement and evaluate the approved improvements as follows:

- 4.1 Consultant will prepare for review and approval by the project sponsor and other involved agencies appropriate timing sheets based on the approved timing plans. Consultant will revise the timing sheets based on comments received from the project sponsor and other involved agencies.
- 4.2 Consultant will assist with the preparation and approval of the Caltrans permit for projects involving installation of GPS clocks at Caltrans signals. MTC will procure all the GPS clocks required for the project. The GPS clocks will be installed by the local agencies at Caltrans signals. The Caltrans traffic operations staff will be present during installation to configure the clocks. MTC will be actively involved to coordinate this task with all stakeholders.
- 4.3 Consultant will implement, or assist agency staff in the implementation of, the new settings and timings. Implementation may have to be done in the field or from a central location, depending upon communication capabilities and agency preferences.
- 4.4 Consultant will fine-tune, or assist agency staff in the fine-tuning of, the new settings and timings. Consultant will fine-tune timings in the field and record all changes. Fine-tuning shall be conducted during times and days that are representative of the times and

- days for which coordination plans were developed. This also requires additional field visits to verify and assess any changes made during the fine-tuning process.
- 4.5 Consultant will conduct travel time and delay studies, including number of stops, at the key corridors identified under Task 2.1.7. Travel time and delay studies shall be conducted during times and days that are representative of the times and days for which coordination plans were developed. A minimum of four runs shall be conducted for each direction for each peak period. Travel time and delay studies shall be conducted using the floating car method.
- 4.6 Consultant will provide to the MTC Project Manager electronic files of all traffic counts, and controller and cabinet information, in a file-naming convention specified by MTC.
- 4.7 Consultant will calculate measures of effectiveness of the improved system, including delay, number of stops, travel time, fuel consumption, emissions, benefit: cost, and cost effectiveness for emissions reductions. The methodology for calculating fuel consumption, emissions, benefit: cost, and cost effectiveness for emissions reductions will be specified by MTC.
- 4.8 Consultant will also calculate the measures of effectiveness for transit achieved with the signal coordination for certain projects, as identified in the kick-off meetings. Only travel-time and speed will be evaluated as a part of this effort since fuel consumption and emissions reduction benefits are almost negligible with many transit agencies using zero-emission or hybrid vehicles. The Benefit-Cost analysis methodology will be developed by MTC to incorporate these benefits. The level of effort involved for this task is considered as an additional service and will be finalized with the WSB.
- 4.9 Consultant will prepare a Final Timings and Evaluation Report, which will include but not be limited to: the final periods of coordination; changes between the timings recommended under Task 3 and the final timings that were implemented; the number of locations where changes were made to better accommodate pedestrians and/or bicyclists; and the results of the evaluation of measures of effectiveness.

Deliverable 4A: Implementation and Fine-tuning, including final timing sheets
Deliverable 4B: Final Project Report with Benefit-cost Analysis, including the final computer model

5. Additional Services

5.1 In addition to the basic signal coordination, the scope of the PASS program includes providing additional services like incident management flush plans, transit signal priority plans, traffic responsive timing plans, weekend timing plans, additional timing plans, technical studies, feasibility studies, evaluation of transit benefits, etc. These services will be requested by the project sponsor in the application and will be included in the WSB, contingent on approval by MTC. Consultant may also be requested to perform these additional services for any projects retimed in the last two years under the RSTP or the

- PASS. Such services may increase the scope of the work to include additional meetings, additional data collection, field visits, technical analyses, studies, fine-tuning, conditional diagrams, updating Visio coversheets, etc.
- 5.2 Upon MTC approval, Consultant shall include a detailed description of the scope of the additional service, a staffing plan, and a level of effort estimate in its WSB. The scope and budget of these services will be negotiated on a case-by-case basis. If these tasks cannot be reasonably negotiated, MTC, at its sole discretion, can withdraw the project assignment to the consultant and assign a different consultant to the project. The payment schedule will be negotiated to compensate for the tasks completed and finalized in the WSB. Additional services may also be requested by Consultant after the WSB has been approved by requesting an amendment to the approved WSB. After MTC approval, any change to the scope or budget must be included in a revised WSB and sent to all project stakeholders.
- 5.3 Consultant may be asked to assist the local agencies in completing the Caltrans permit application for installation of GPS clocks. Consultant will also make any edits to the application upon feedback from Caltrans permit staff. This task will be considered an additional service and the approx. level of effort shall be included in the WSB.
- 5.4 Consultant may be asked to subcontract an electrical contractor or other firms or agencies with required licenses and expertise to install GPS clocks or other communications equipment at Caltrans signals for certain projects. The subcontractor has to be approved by Caltrans and MTC, and will be required to secure a Caltrans permit. This task will be considered an additional service and the Consultant will be reimbursed for actual costs billed by the subcontractor.

6. Reduced Services

Consultant may be requested to perform only some of the services above in cases where some services are not part of the PASS project, are already available, or agency staff wishes to perform them themselves. Should reduced services be requested, Consultant shall identify in its WSB which tasks will be performed by the Consultant and which will be performed by the agency. The fee for reduced services shall be a percentage of the base fee per intersection or a negotiated amount, which is commensurate with the proportion of services to be performed by Consultant. Deliverables will be negotiated on a case-by-case basis.

II. Schedule

	<u>Task</u>	<u>Timeline for 2011/12 Cycle</u>
	Call for Projects and Consultant	March 2011
0.	RFQ/Amendments	
	Project Approval/Notification	June 2011
	Project Start-Up	
1.	Kick-Off Meetings	July 2011
	Workscope, Schedule, and Budget	August 2011
	Analysis of Existing Conditions	
2.	Data Collection	September 2011
	Analysis	October 2011
3.	Recommendations	January 2012
1	Implementation and Evaluation	Implementation by March 2012;
4.	Implementation and Evaluation	Final Project Report by May 2012

III. Budget

1. Signal Coordination

MTC will pay consultants on a fixed fee basis, based on the following fee schedule:

Service (Tasks 0 through 4)	# of Scenarios*	<u>Amount Due</u>
Time-of-day signal coordination with timings	3	\$2350 per intersection
implemented remotely from intersection, e.g., via dial-up or from traffic management center	2	\$2100 per intersection
Time-of-day signal coordination with timings	3	\$2550 per intersection
implemented in the field	2	\$2300 per intersection

^{*} Scenario = morning, off-peak/midday, or afternoon peak periods

2. Additional Services

MTC recognizes that some projects may require additional analyses, or have approved additional services as identified above in Section 5.1: Additional Services. The budget and payment schedule for these additional services is based on the level of effort to complete these tasks, and is negotiated before finalizing the WSB. If any of these cannot be reasonably negotiated, MTC, at its sole discretion, can withdraw the project assignment to the consultant and assign a different consultant to the project.

3. Payment Schedule

MTC will pay consultants by deliverable-based tasks based on the following payment schedule. The Consultant will submit the invoices directly to MTC Accounting. MTC will approve the payment after both the project sponsor and the MTC Project Manager have approved the deliverable.

<u>Task</u>	<u>Deliverables (#)</u>	<u>Payment</u>
1.	Draft and Final Workscope, Schedule and Budget (#1A and #1B)	5% of Project Budget
2	Draft Existing Conditions Report (#2A)	35% of Project Budget
۷.	Final Existing Conditions Report (#2B)	10% of Project Budget
3	Draft Recommendations Report (#3A)	15% of Project Budget
٦.	Final Recommendations Report (#3B)	10% of Project Budget
1	Implementation and Fine-tuning (#4A)	15% of Project Budget
7.	Final Project Report with Benefit-cost Analysis (#4B)	10% of Project Budget
5.	Additional Services	To Be Negotiated

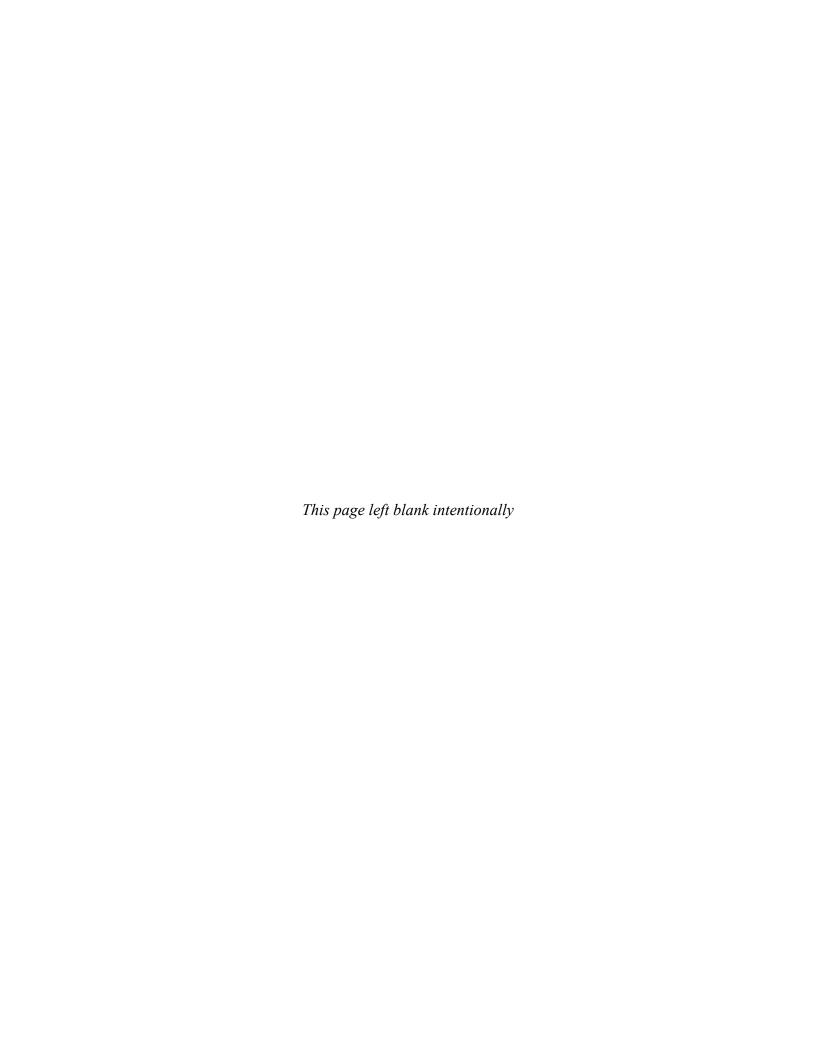
APPENDIX - B

INDEMNIFICATION AGREEMENT

(Available for download from the MTC website at: http://www.mtc.ca.gov/funding/ or applicants may contact the MTC Project Manager directly)

Please note:

- 1. All participating agencies, including the primary sponsor, are required to sign this agreement with MTC. If your agency has executed an agreement for the PASS 2010/11 Cycle, you are not required to complete this agreement. If you have any questions regarding the existence or validity of your agency's agreement, please contact the MTC Project Manager directly.
- 2. Each Agency is required to submit two (2) signed originals of this agreement and submit to the MTC Project Manager. After executing the agreement one (1) original will be sent for your records.



WAIVER OF CLAIMS AND INDEMNIFICATION AGREEMENT Between METROPOLITAN TRANSPORTATION COMMISSION And AGENCY NAME

THIS AGREEMENT is made and entered into as of the insert day day of insert month, 2011, by and between the Metropolitan Transportation Commission, a regional transportation planning agency established pursuant to California Government Code § 66500 *et seq.*, (herein called "MTC"), and agency name (herein called "CITY"/"COUNTY"/"TOWN").

WITNESSETH

WHEREAS, MTC has entered or will enter into technical services agreements with several consulting firms (herein called "the Consultants"), under which the firms will provide assistance to various Bay Area jurisdictions in the retiming of traffic signals in those cities (herein called "the Project"); and

WHEREAS, CITY/COUNTY/TOWN is participating in the Project by receiving assistance from one or more of the Consultants (herein called "the Consultant"); and

WHEREAS, the parties wish to define CITY's/COUNTY's/TOWN's obligations to MTC respecting waiver of claims and indemnity;

NOW, THEREFORE, the parties hereto agree as follows:

1.0 <u>WAIVER OF CLAIMS AGAINST MTC</u>

CITY/COUNTY/TOWN waives all claims by CITY/COUNTY/TOWN, its directors, supervisors, officers, employees, or agents against MTC, its commissioners, officers, and/or employees for damages, loss, injury and/or liability, direct or indirect, resulting from CITY's/COUNTY's/TOWN's participation in the Project and/or the services provided to CITY/COUNTY/TOWN by the Consultant under contract to MTC. CITY's/COUNTY's/TOWN's waiver shall not apply to liability arising from and caused by the gross negligence or willful misconduct of MTC, its commissioners, officers, and/or employees.

2.0 INDEMNIFICATION AND DEFENSE

CITY/COUNTY/TOWN agrees to indemnify, hold harmless and defend MTC, its commissioners, officers, and employees from any and all third party claims, demands, lawsuits, liability, loss, damages, injury and/or liability, direct or indirect (including any and all costs and expenses in connection therewith), resulting from or in connection with provision of services to CITY/COUNTY/TOWN by the Consultant under contract with MTC, to the extent such claims, demands, etc. are not covered by the Consultant's indemnification of MTC in the Consultant's contract with MTC. CITY's/COUNTY's/TOWN's indemnification obligation shall not apply to liability arising from and caused by the gross negligence or willful misconduct of MTC, its commissioners, officers, agents, and employees. CITY/COUNTY/TOWN is responsible for obtaining from MTC a copy of the applicable Consultant agreement(s).

3.0 TERM

The term of this Agreement shall continue indefinitely, applying to multiple Consultant contracts, unless terminated by written notice of either party or superseded by another Indemnification Agreement.

IN WITNESS WHEREOF, this agreement has been executed by the parties hereto.

METROPOLITAN TRANSPORTATION COMMISSION	AGENCY NAME	
Steve Heminger, Executive Director	Name of Authorized Signator, Title	
	Approved as to form:	
	Name, City/County/Town Attorney	



ATTACHMENT – A PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION ("PASS") CONSULTANT INDEMNIFICATION AND INSURANCE REQUIREMENTS

INDEMNIFICATION

CONSULTANT shall indemnify and hold harmless MTC, Caltrans and Client Jurisdictions, their commissioners, directors, officers, agents, and employees from any and all claims, demands, suits, loss, damages, injury, and/or liability (including any and all costs and expenses in connection therewith), incurred by reason of any negligent or otherwise wrongful act or omission of CONSULTANT, its officers, agents, employees and subcontractors, or any of them, under or in connection with this Agreement; and CONSULTANT agrees at its own cost, expense and risk to defend any and all claims, actions, suits, or other legal proceedings brought or instituted against MTC, Caltrans or Client Jurisdictions, their commissioners, directors, officers, agents, and employees, or any of them, arising out of such negligent or otherwise wrongful act or omission, and to pay and satisfy any resulting judgments.

The indemnification obligation shall not apply to liability arising from and caused by the adjudicated or admitted negligence or willful misconduct of MTC or any of the Client Jurisdictions. If the adjudicated or admitted negligence or willful misconduct of MTC or any of the Client Jurisdictions contributes to a loss, CONSULTANT shall not be obligated to indemnify such indenmitee for the proportionate share of such loss caused by such negligence or willful misconduct.

INSURANCE REQUIREMENTS

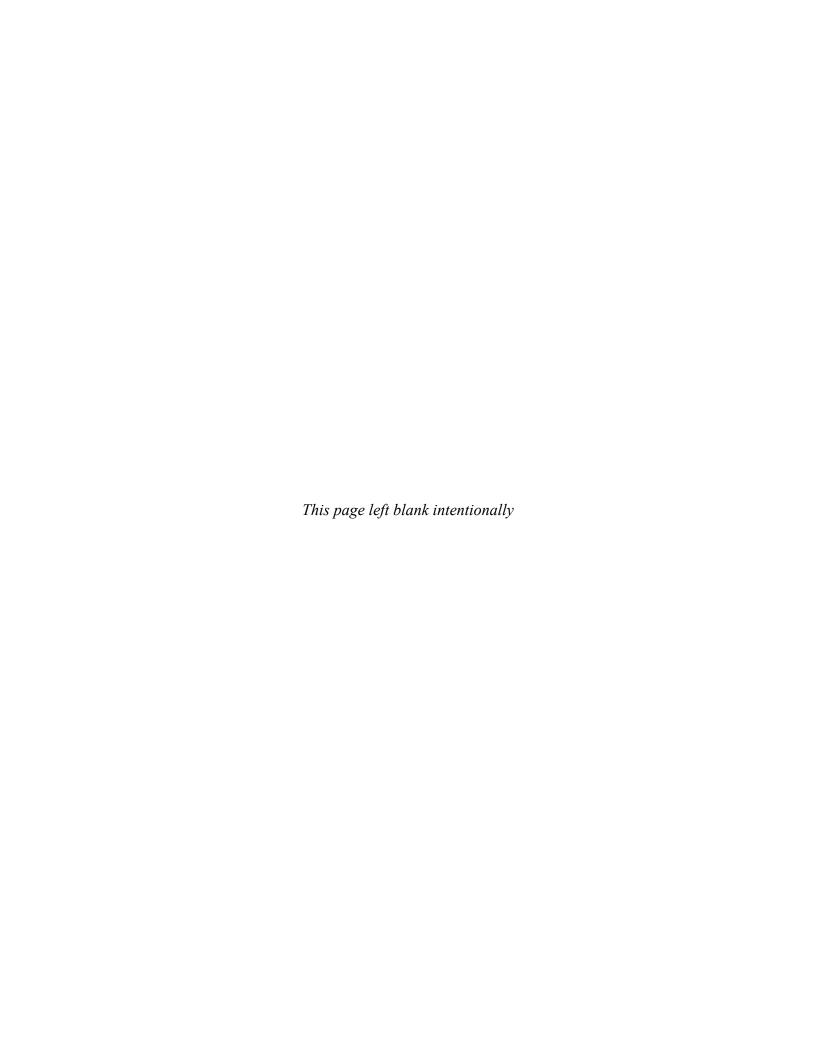
- A. <u>Minimum Coverages</u>. CONSULTANT shall, at its own expense, obtain and maintain in effect at all times during the life of this Agreement the following types of insurance against claims, damages and losses due to injuries to persons or damage to property or other losses that may arise in connection with the performance of work under this Agreement, placed with insurers with a Best's rating of A-X or better.
- 1. Workers' Compensation Insurance in the amount required by the applicable laws, and Employer's Liability insurance with a limit of not less than \$1,000,000 per employee and \$1,000,000 per occurrence, and any and all other coverage of CONSULTANT's employees as may be required by applicable law. Such policy shall contain a Waiver of Subrogation endorsement in favor of MTC. Such Workers Compensation & Employers Liability may be waived, if and only for as long as CONSULTANT is a sole proprietor with no employees.
- 2. <u>Commercial General Liability Insurance</u> for Bodily Injury and Property Damage liability, covering the operations of CONSULTANT and CONSULTANT's officers, agents, and employees and with limits of liability which shall not be less than \$1,000,000 combined single limit per occurrence with a general aggregate liability of not less than \$2,000,000, and Personal & Advertising Injury liability with a limit of not less than \$1,000,000. Expense for Indemnitee's defense costs shall be outside of policy limits and such policy shall be issued on a Duty to Defend Primary Occurrence Form.
- MTC, Caltrans and Client Jurisdictions, their commissioners, directors, officers, representatives, agents, and employees are to be named as additional insureds. Such insurance as afforded by this endorsement shall be primary as respects any claims, losses or liability arising directly or indirectly from CONSULTANT's operations.

- 3. <u>Business Automobile Insurance</u> for all automobiles owned, used or maintained by CONSULTANT and CONSULTANT's officers, agents and employees, including but not limited to owned, leased, non-owned and hired automobiles, with limits of liability which shall not be less than \$1,000,000 combined single limit per occurrence.
- 4. <u>Umbrella Insurance</u> in the amount of \$2,000,000 providing excess limits over Employer's Liability, Automobile Liability, and Commercial General Liability Insurance.
- 5. Errors and Omissions Professional Liability Insurance (if applicable) in an amount no less than \$1,000,000. If such policy is written on a "Claims-Made" (rather than an "occurrence") basis, CONSULTANT agrees to maintain continuous coverage in effect from the date of the commencement of services to at least three (3) years beyond the termination or completion of services or until expiration of any applicable statute of limitations, whichever is longer. The policy shall provide coverage for all work performed by the CONSULTANT and any work performed or conducted by any subcontractor/consultant working for or performing services on behalf of the CONSULTANT. No contract or agreement between the CONSULTANT and any subcontractor/consultant shall relieve the CONSULTANT of the responsibility for providing this Errors & Omissions or Professional Liability coverage for all work performed by the CONSULTANT and any subcontractor/consultant working on behalf of the CONSULTANT on the project.
- 6. <u>Property Insurance.</u> Property Insurance covering CONSULTANT'S own business personal property and equipment to be used in performance of this Agreement, materials or property to be purchased and/or installed on behalf of MTC (if any), debris removal, and builders risk for property in the course of construction (if applicable). Coverage shall be written on a "Special Form" ("All Risk") that includes theft, but excludes earthquake, with limits at least equal to the replacement cost of the property. Such policy shall contain a Waiver of Subrogation in favor of MTC. If such insurance coverage has a deductible, the CONSULTANT shall also be liable for the deductible.
- B. <u>Deductibles</u>. Any deductible, or self-insured retention of \$100,000 or greater, shall be subject to the approval of MTC. Any other special coverage restrictive devices such as "coinsurance" must be declared and approved by the Project Manager prior to job commencement. Such approval will not unreasonably withheld.
- C. <u>Notice of Termination</u>. All CONSULTANT policies shall provide that the insurance carrier shall give written notice to MTC at least 30 days prior to cancellation of the policy or policies (unless canceled for non-payment, then 10 days prior written notice will be given), and shall provide notice of such cancellation to MTC and any other additional insured.
- D. <u>Certificates of Insurance</u>. Prior to commencement of any work hereunder, CONSULTANT shall deliver to MTC Certificates of Insurance verifying the aforementioned coverages. Such certificates shall make reference to all provisions and endorsements referred to above and shall be signed on behalf of the insurer by an authorized representative thereof. CONSULTANT agrees, upon written request by MTC, to furnish copies of such policies or endorsements, certified by an authorized representative of the insurer.
- E. <u>Disclaimer</u>. The foregoing requirements as to the types and limits of insurance coverage to be maintained by CONSULTANT are not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by CONSULTANT pursuant hereto, including, but not limited to, liability assumed pursuant to Article 9 of this Agreement.
- F. <u>Subconsultant's Insurance</u>. CONSULTANT shall require each of its subconsultants to provide the aforementioned coverages, unless such coverages are waived or reduced in writing by the MTC Project Manager.

APPENDIX - C

APPLICATION FORM

(Available for download from the MTC website at: http://www.mtc.ca.gov/funding/ or applicants may contact the MTC Project Manager directly)



APPLICATION

PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS 2011/12)

PART I: GENERAL INFORMATION

a) PROJECT SPONSOR
Name & Title:
Organization:
Mailing Address:
Telephone:
Fax:
Email:
b) PROJECT MANAGER Please provide the contact information of the person to answer questions on this application and who will also act as the agency Project Manger. Leave blank if same as above.
Name & Title:
Organization:
Mailing Address:
Telephone:
Fax:
Email:
c) PROJECT TITLE Please provide a descriptive and distinctive name for the project.
d) PROJECT DESCRIPTION Please describe the project and the services being requested.

e)	OTHER	PARTI	CIPA'	TING A	AGENCIES

Including your agency, please list all the agencies involved,	the # of project signals and the role
of each agency with respect to the project.	

Agency	Role	Corridor	# of Signals	
		AL # OF PROJECT SIGNALS		
f) INDEMNIFICATION AGREEMENT Please indicate if your agency has executed an indemnification agreement with MTC for the PASS 2010/11 Cycle. If you have any questions regarding the existence or validity of your agency's agreement, please contact the MTC Project Manager directly.				
[] YES	[] NO			
If No, please explai	n how and when your agency will	be able to submit the agreement t	o MTC:	
g) OTHER PARTICIPATING AGENCIES INDEMNIFICATION AGREEMENT Please indicate if the other participating agencies have executed an indemnification agreement with MTC for the PASS 2010/11 Cycle. If you have any questions regarding the existence or validity of the agency's agreement, please contact the MTC Project Manager directly.				
Agency 1 Name:				
[] YES				
If No, please explain how and when the agency will be able to submit the agreement to MTC:				
Agency 2 Name:				
[] YES	[] NO			
If No, please explai	n how and when the agency will b	be able to submit the agreement to	MTC:	

PART II: SERVICES REQUESTED

a) BASIC SIGNAL COORDINATION Check all that apply and list last date of signal retiming.
[] Weekday Peak Period Time-of-Day Traffic Signal Coordination: [] Weekday AM [] Weekday Midday [] Weekday PM
Date of last signal retiming:
[] No basic signal retiming required except for Additional Services as requested.
b) ADDITIONAL SERVICES These services can be requested on top of basic signal coordination as outlined above or for any corridors retimed under RSTP or PASS in the last two years.
[] Weekend Peak Period Time-of-Day Traffic Signal Coordination: [] Two Scenarios [] Three Scenarios [] Other, specify:
[] Incident Management Flush Plans
[] Transit Signal Priority Plans or Feasibility Study
[] Additional Timing Plans, please specify:
[] Traffic Responsive Timing Plans
[] Adaptive Signal Timing
[] Other Technical Services, please specify:
Please indicate if the retiming of this project is part of one of the following cycles:
[] RSTP 2009 [] PASS 2010/11 [] PASS 2011/12
c) CONSULTANT PREFERENCE Please rank (1, 2 or 3) the PASS 2011/12 consultants in the order of your preference. Please note that MTC will assign project consultants based on the consultants' performance during the prior year, services requested in the application, project sponsor preferences, and contract equity. Efforts will be made to assign consultants based on project sponsor preferences, but it is possible that the assigned consultant may not be the sponsor's first or second preference.
[] Kimley-Horn and Associates [] TJKM Consultants [] URS Corporation
Please explain your preference for Consultant Rank #1:
d) CONSULTANT ASSIGNMENT Please indicate your willingness to work with the consultant assigned by MTC. MTC reserves the right to withdraw a project grant if the project sponsor is unwilling to work with the consultant assigned for the project.
[] YES [] NO
If No, please explain:

PART III: DETAILED PROJECT INFORMATION

a) AVAILABLE DATA Charles all that apply Places he man and to provide this information to the project consultant			
Check all that apply. Please be prepared to provide this information to the project consultant immediately after project approval notification.			
[] Timing Sheets [] Signal Timing Preferences [] Coordination Plans [] Transit Priority Preferences [] Traffic Signal As-builts [] Computer Model [] Aerial Photos [] Three Years of Collision Data [] Other (please list below):			
Describe exceptions and provide clarifications as necessary:			
b) IMPLEMENTATION			
Please indicate how the new timing plans will be implemented. Please provide accurate information as this will be used to calculate the project budget.			
[] Traffic Management Center (TMC) or similar central location, please specify # of			
signals:			
[] Field Implementation, please specify # of signals:			
[] Other, please specify:			
c) Are all traffic signals that will be retimed as part of the project currently running in free operation, or if coordinated, has it been at least three (3) years since the last time the coordination plans were updated?			
[] Yes [] No			
If no, please explain:			
d) Are all the traffic signals that will be retimed as part of the project currently equipped with clocks that can be automatically synchronized to a common time reference (via interconnect, WWV, or GPS)?			
[] Yes [] No			
If no, please explain how you plan to establish the communication:			

e) Are you requesting funds from PASS to establish communication between any project signals?	of the
[] Yes [] No	
If yes, please explain in detail: the # of signals, the agencies involved, the type of communications and the cost estimates (exclude costs for the GPS Clocks):	
f) If Caltrans signals are involved in the project, has the Caltrans Signal Operation been notified of this project? Please note that no support letters are required from Caltrans are	
[] Yes [] No [] N/A	
If Yes, please provide the name and contact of the Caltrans staff:	
If No, please explain:	
g) If Caltrans signals are involved in the project, please list the signal software(s) your agency and how you propose to coordinate with the state 270 program.	used by
Software(s) used:	
Please describe the coordination plan:	
1) A PRICE ON A LOCATION OF COLUMN CO	
h) ADDITIONAL SERVICES (Refer to Appendix A: Section 5, Scope of Work, Schedule and Budget for eligible see Please list the additional services being requested and the # of project signals involved particular task (Please provide more details in a separate sheet if necessary).	
Additional Service(s) # o	f Signals

i) ADDITIONAL DATA

Please include, in a separate attachment(s), data supporting the above requested Additional Services and how they align with the goals and objectives of the program. (i.e. if requesting weekend timing plans, weekend volumes need to be greater than or equal to the weekday peak period volumes, etc.)

PART IV: ATTACHMENTS

a) VICINITY MAP

Please include, in a separate attachment, a Vicinity Map clearly identifying the nearby jurisdictions, transit centers, highways, etc.

b) DETAILED PROJECT AREA MAP

Please include, in a separate attachment, a Map showing an overview of the project area with all of the project signals, cross streets, highways, etc.

c) DETAILED PROEJCT SIGNAL INFORMATION

Please include, in a separate attachment, a table including the following information in separate columns for all project signals: project signal, cross-street(s), signal ownership, controller type, and coordination capability (interconnect, WWV, GPS, etc.), field or TMC implementation, and services requested (basic timing, additional services, etc.)

d) REQUIRED GPS CLOCKS INFORMATION

If relevant, please include, in a separate attachment, a table showing all signals that require GPS clocks or other communications equipment, signals ownership, controller type, etc.

e) TRANSIT INFORMATION

Please include, in a separate attachment, a table including the following information for all the project corridors: transit provider, route number, frequency, ridership info, etc.

Please note that this information is required for all project applications.

PART V: PROPOSED PROJECT BENEFITS

a) GOALS & OBJECTIVES Please indicate which of the goals listed below apply to this project.
[] Coordinate local and state-owned signal systems
[] Establish/maintain communications between Caltrans and local systems
[] Operate on corridors of regional significance
[] Retime to support Transit Signal Priority
[] Retime to support Other Regional Programs, please specify:
Other, please specify:

b) Please describe how the proposed project aligns with the above selected goals and objectives of the PASS program.		
c) Please provide other relevant information supporting the project.		

PART VI: DEMONSTRATION OF PARTICIPATION AND SUPPORT

a) LOCAL AGENCY RESOURCES
Please describe the resources (staff time & additional funding) the sponsor agency will allocate
for the successful completion of the project.
b) PROJECT READINESS/ADHERENCE TO STANDARD PASS SCHEDULE
Describe all known factors outside of the PASS consultant's control that may require a schedule extension beyond the program's timeline (coordination with other regional program schedule,
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APPLICATION SIGNATURES

Please sign below and have an authorized official from all participating agencies sign below or attach a letter of support (Note: The primary sponsor must sign this application, and if Caltrans signals are involved, no signatures or letter of support are required from Caltrans). By signing the application and/or providing letters of support, the signatory affirms that the statements contained in the application are true and complete to the best of their knowledge. Please note that all participating agencies including the primary sponsor are required to sign an Indemnification Agreement with MTC.

Primary Sponsor:	
Signature	
Print Name	
Title	
TILLE	
Agency	
Participating Agencies:	
Signature	Signature
Print Name	Print Name
Title	Title
Agency	Agency

 $\begin{array}{c} Appendix-C \\ Application \ for \ PASS \ 2011/12 \ Cycle \end{array}$

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